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ABSTRACT

The philosophy of the special education program at the University of North Florida is to develop a competency based teacher training program at the masters level. The program is designed to produce teachers who can quantitatively demonstrate they can produce academic achievement gains and desirable behavior changes in all special education students whether they are in self contained special education classes, regular classes, resource rooms, or being prepared to be returned to the mainstream. The program's basic component revolves around 13 generic competencies that are felt to be basic to the training of all teachers. Results of a study involving 30 graduate students support the validity of each of these competencies. (Author/SBH)

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The Validation of Competencies in Special Education

A Competency Based Teacher Training Program

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Running Head: Validation of Teacher Competencies

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The Validation of Competencies in Special Education

A Competency Based Teacher Training Program

Abstract

The philosophy of the special education program at the University of North Florida is to develop a competency based teacher training program at the masters level. This program will produce teachers who can quantitatively demonstrate that they can produce academic achievement gains and desirable behavior changes in all special education students whether they are in self contained special education classes, regular classes, resource rooms or being prepared to be returned to the mainstream of education.

The basic component of the program revolves around thirteen generic competencies that are felt to be basic to the training of all teachers. Individually these competencies have been validated by research and literature as being significant in the preparation of teachers (Van Nagel 1974). These competencies have been found necessary to promote academic achievement gains and desirable behavior changes in children. (The generic competencies are germane to Special Education teachers, consulting teachers, resource room teachers and regular classroom teachers responsible for the education of children.)

The Validation of Competencies in

Special Education

A Competency Based Teacher Training Program

Introduction

Just what is it that teachers do to cause pupils to learn? This issue has long been a major concern in the field of education. The teaching act requires many skills, abilities and characteristics that are difficult to identify and define (Gage, 1972; Peter, 1975: Stern, 1963). Many studies of teacher-pupil interaction have identified numerous skills demonstrated by the teacher which seem to cause desirable changes in pupils, that is, learning (Peter, 1975). However, precise measurement of teacher skills has been virtually nonexistent (Houston and Howsam, 1972).

In recent years the movement toward accountability in teaching has given impetus to an emphasis on competency performance. As Houston (1974) points out, the movement toward performance based teacher education has as its foundation the idea that teachers should be trained to do those things that cause or facilitate educational growth in their pupils.

Currently in the field of education, greater and greater stress is being placed upon the quality of teacher training programs. The demand that some attempt be made to determine the effectiveness of teacher training programs has become increasingly insistent (Suchman, 1967). State Department of Education, governmental agencies, professionals, and lay groups are demanding that educators provide evidence as to the worth and effectiveness of their teacher training programs.

Many states; i.e. New York, Texas, Pennsylvania, Florida; have begun to explore the possibility of certification of teachers based on performance as well as on level of education and knowledge. The United States Office of Education has encouraged the performance-based movement. Through its funding,

the United States Office of Education continues to support teacher training programs which require performance-based approach. The American Association of Colleges for Teacher Education has given impetus to the movement by developing standards that require a faculty to define the professional roles of the teachers and design preparatory programs based on these roles. In concert with United States Office of Education and American Association of Colleges for Teacher Education, the Committee on National Program Priorities in Teacher Education has recommended the testing of the power of competency-based teacher education as a means of improving the performance of educational personnel in the nation's schools (Rosner, 1972).

The question has arisen whether teacher educators have provided experiences which lead to the acquisition of competencies relevant to effective functioning in the classroom. Rosner (1972) has pointed out that one of the most complex problems confronting teacher education has been the identification of criteria by which to assess the effectiveness of teacher trainee programs. He suggests three basic methods of identifying specific skills and competencies: (1) the examination of research and theory of the behavioral and social sciencies, (2) the examination of content and skill emphasis of specific school curricula, and (3) the conducting of inquires of master teachers and teacher trainers.

Following Rosner's suggestions the Department of Special Education at the University of North Florida examined appropriate research literature. In addition the Department surveyed both teacher training curricula from other universities and curricula from public school programs. A survey was also conducted in which master teachers and teacher trainers identified those skills and competencies deemed necessary to effect academic gain in pupils*

*Information available from the Special Education Department at the University of North Florida.

Utilizing information from the above sources, thriteen generic competencies that appear to be germane to the training of all educators were identified and efforts have been made to validate these competencies. These competencies are as follows:

1. Objectives Lesson plans are stated in observable and measurable terms. The teacher states his/her long range objective and enroute (daily) objectives in terms which are observable and measurable. The objective describes what the learner will perform, and the criteria of success.
2. Rapport The teacher has established rapport with the pupil. This is evidenced by E and one or more of the following:
   A. The pupil initiates conversation with the teacher
   B. The pupil asks the teacher questions
   C. The pupil smiles at the teacher
   D. The pupil offers help to the teacher
   E. The objective has been communicated to the learner. This is evidenced by pupil verbal statements as to what he and the teacher are trying to accomplish.
3. Motivation The teacher has identified the pupil's interests and used the student's interests in his/her lessons. This is evidenced by (a) completion of an interest inventory and (b) the instructional materials and/or the teacher's verbal statements reflecting the student's interests.
4. Entering Behavior The teacher has determined the pupil's entering behavior as evidenced by criterion referenced testing.
5. Modality Assessment The teacher has identified the pupil's strongest modality or modalities of learning. This is evidenced by diagnostic testing.

6. Elicitors Identified The methods and materials employed in the lesson bring forth desirable pupil responses. This is evidenced by:

   A. Pupil attention to task and/or teacher

   B. Completion or near completion of task

   C. Emission of desirable behaviors on the part of the pupil.

   (Evaluated by supervisor or professor.)

7. Lessons are Developmental The teacher's lessons for the pupil contain enroute objectives that are hierarchically arranged and directly related to the terminal objective. This is noted by examining the daily Diagnostic Prescriptive Teaching forms of the teacher and by looking specifically at the enroute objectives.

   Instruction should:

   A. Be hierarchically arranged

   B. Proceed from the concrete to the abstract

   C. Proceed from simple to complex skills.

8. Reinforces Achievement The teacher uses reinforcement techniques to increase the academic achievement of the pupil. This is evidenced by:

   A. Observation and audition of the teacher's verbal statements in response to learner behavior by supervisor or professor, and/or

   B. Written records of symbolic reinforcers for gains in pupil achievement.

9. Reinforces Desirable Behavior - Does Not Reinforce Undesirable Behavior The teacher applies reinforcement techniques to pupil behavior. This is evidenced by:

   A. Observation and audition of the teacher's behavior in response to pupil behavior, and/or

   B. Written records that evidence baseline data and reinforcement interventions

C. The pupil's behavior, as recorded by the teacher, must show desirable progressive developmental changes in the pupil's deficit behavior or a decrease in the interfering behavior.

10. Reinforcement Schedules and Reinforcement Levels

A. The teacher's reinforcement schedule evidences change in the ratio or interval or reinforcement. This is noted under the category of contingency on the Diagnostic-Prescriptive Teaching Forms, or

B. The teacher reinforcement level has changed. This is noted under Reinforcement Level on the Diagnostic-Prescriptive Teaching Forms.

11. Evaluation The teacher will evaluate instruction in terms of behavior change. This is evidenced by the following:

A. Written notation of the Diagnostic-Prescriptive Forms under the category of Objective Accomplished and Explanation.

B. The sucess rate of the pupil (the pupil's work is attached to the Diagnostic-Prescriptive Form). Toward the completion of the lesson the pupil should have achieved correctly 9 out of 10 responses or have answered correctly 90% ofthe time.

12. Teaches for transfer and Generalization The pupil evidences the behavior he has learned in an instructional setting in other settings. This is noted by observation and audition of the teacher, supervisor, professor or other persons, and is recorded under the category Generalization of Learning on the Diagnostic-Prescriptive Teaching Forms.

13. Knowledge of Theoretical and Scientific Studies The teacher can translate scientific studies and theorectical formulation into effective educational implementation:

A. The teacher, at all times, must be able to give a rationale for what he/she is doing. This rationale should be verifiable by the literature in the field.

B. The teacher answers correctly 80% of the questions on an objective

exam.

It is recognized that the validation of competencies is a complex process. Several validation processes are currently being used by the University of North Florida's Special Education Program. The purpose of this study is to address itself to the procedures that deal with the validation of competencies related to pupil achievement.

Statement of the Problem

In this study it has been assumed that one way to measure teacher effectiveness is through academic achievement gains of pupils. Therefore, the following questions were addressed.

1. Can teachers trained in a competency based teacher education program using the thirteen generic competencies affect academic achievement gains in exceptional pupils?
2. If the above is true, how would the rate of gain compare to that expected of normal pupils?

Hypotheses

In order to address the above stated problem it was hypothesized that teachers trained in a competency based teacher education program, utilizing the aforementioned generic competencies, would effect significant achievement gains in a sample of exceptional pupils as evidenced by a comparison pre- and post test achievement scores measured by the math and reading sections of the Wide Range Achievement Test. The predetermined significance level was .05.

It was further hypothesized that teachers trained in a competency based teacher education program utilizing the aforementioned generic competencies would effect significant achievement gains in a sample of exceptional pupils beyond those gains which would be expected in a normal population. This was evidenced by a comparison of actual achievement scores and extrapolated

expected achievement scores measured by the math and reading sections of the Wide Range Achievement Test. The expected achievement scores were extrapolated from data based on a normal population. The predetermine level of significance was .05.

Method

Subjects

The subjects involved in this study were those 30 graduate students enrolled in the final practicum phase in the Special Education Masters Program at the University of North Florida. At the time of this study these graduate students had completed their graduate program with the exception of this final practicum phase. These graduate students were teaching in their own classrooms in one of the public school systems within Duval, St. Johns, Clay, Baker, or Nassau County in Northeast Florida. All of these classrooms were either self-contained or resource classrooms for pupils indentified as mental retarded, learning disabled, or emotional disturbed.

Procedures

Each of the 30 graduate students were assigned to a pupil within his/her own classroom. The graduate students were then required to pretest each of these pupils using the reading and arithmetic portions of the Wide Range Achievement Test (WRAT) and diagnostic assessment techniques as prescribed in competencies numbers four and five.

The graduate students then designed instructional units in arithmetic and reading for each of the pretested pupils based on the results of the diagnostic information. These instructional units were to be designed in accordance with the Department of Special Education's Diagnostic - Prescriptive teaching form which reflects (see figure 1) all of the thirteen generic competencies.

Figure I

UNIVERSITY OF NORTH FLORIDA
DEPARTMENT OF SPECIAL EDUCATION

DIAGNOSTIC PRESCRIPTIVE FORM

Pupil _____ Lesson # _____ Teacher _____

Ia. Terminal Objective _____

_____

Ib. Enroute Objective _____

_____

_____

II. Rapport Established _____ Yes _____ No

A. Long range objective communicated to learner. _____ Yes _____ No

B. Enroute objective communicated to learner. _____ Yes _____ No

III. Pupils Interests _____

IV. Entering Behavior _____

_____

Va. Modality: Strongest _____ Weakest _____ How established _____
b. Modality Emphasized; _____ Visual _____ Auditory _____ Haptic _____ Combination _____

VIa. Elicitor Level: Describe _____
b. _____ Abstract _____ Semi-Abstract _____ Concrete
c. Method of Relating: _____
_____
_____
d. Activity: _____
_____

VII, VIII, IX, X. Reinforcer:
Describe Contingency Rating Good Fair Poor

Abstract _____

Social _____

Symbolic _____

Primary _____

XI. Objective Accomplished: _____ Yes _____ No
Number of Responses Correct: _____ out of _____ or percentage of time _____
Explanation: _____

XII. Generalization of Learning-Describe: _____

_____

Based on these instructional units the graduate student then conducted thirty teaching sessions of approximately forty-five minute duration with the pretested pupils over a period of an academic quarter. These thirty sessions, using the above mentioned instructional units, were evaluated by a university practicum supervisors, to determine by means of a criterion checklist* if infact all of the thirteen generic competencies were being employed on a consistent basis..

Upon completion of these thirteen instructional sessions the graduate students then post tested the pupils, again employing the Wide Range Achievement Test. In addition, expected achievement gains were computed for each pupil using the norms given in the Wide Range Achievement Test Manual.

Analysis of Data

As mentioned in the preceeding section, Pre and Post test achievement data was obtained from the arithmetic and reading sections of the WRAT for each of the pupils involved in the study. In addition to the pre and post test scores, expected achievement test scores for each pupil were explrapolated using the Wide Range Achievement Test Manual.

The pre and post test scores were then compared by a t-test of means using the computor facilities at the University of North Florida. This was done to determine if there was infact significant achievement gains in the achievement levels of these pupils.

Following this comparison, a t-test for correlated data (Downie and Heath, 1970) was used to compare the actual post test scores and the extrapolated expected achievement scores. This was done to determine if in fact the achivement gains made by these exceptional pupils were significantly better than those which could be expected within a normal population.

*This checklist is available from the Department of Special Education of the University of North Florida.

Results

The pretest administered to the thirty exceptional pupils yeilded raw mean scores of 25.4 and 43.2 for the math and reading sections of the WRAT respectively (see Tables 1 and 2). The standard deviations of the pretest were 5.31 for the math section and 9.98 for the reading section (see Tables 1 and 2).

The post test administration of the Wide Range Achievement Test yeilded a raw mean score of 27.27 for the math section and 48.07 for the reading section. The respective standard deviations were 5.56 and 9.75 (see Tables 1 and 2).

When the mean scores for the math pre and post tests were compared using a t-test a significant difference was found with post test scores being significantly higher than the pretest scores ($t = 3.71$, $df = 29$, $p < .05$). When the pretest and post test scores for reading were compared using a t-test significant differences were again found with the post test scores being significantly higher than the pretest scores ($t = 7.89$, $df = 29$, $p < .05$).

The extrapolated expected raw scores for the math and reading sections of the Wide Range Achievement test yeilded raw mean scores of 26.07 and 46.58 respectively. The standard deviations for the extrapolated raw scores were 5.26 for the math section and 9.30 for the reading section (see Tables 1 and 2).

When the actual post test scores for the math section were compared against expected achievement scores extrapolated from the test manual using a correlated t-test significant differences were found ($t = 2.85$, $df = 29$, $p < .05$). The actual achievement gain scores were found to be significantly higher than the expected achievement scores as based on a normal population.

When a comparison using a correlated t-test was made of the actual post test raw scores and the extrapolated achievement raw scores for the reading section of the test significant differences were found ($t = 2.05$, $df = 29$, $p < .05$). Again the actual achievement scores.

These results lead to retaining both of the hypothesises. That is to say that it was found that teachers who employed the 13 generic competencies developed by the Department of Special Education at the University of North Florida did in fact bring about significant achievement gains in exceptional pupils and that those achievement gains were infact greater than those which could be expected within a normal population.

Discussion

In this study two concerns were addressed. These were:

1. Whether teachers trained in the use of the thirteen generic competencies could bring about significant achievement gains in exceptional pupils, and
2. Whether the achievement gains realized by these pupils would be significantly greater than those that might be expected within a normal population.

The results of this study demonstrates that teachers who were trained with those thirteen generic competencies and consistently utilized these competencies did in fact bring about significant achievement gains in exceptional students. This lends support not only to the effectiveness of the teacher training program but also to the utilization of the competencies thus identified.

In addition to the obvious need for replication additional studies are needed to validate the specific competencies used within the described program. One suggested method which has been considered for this validation is a comparison of teachers trained in the use of these competencies and teachers trained under programs with a different emphasis. Other studies which are

suggested by these results include studies of single subject designs employing baseline data

Table 1

Mean Raw Scores on Math Section of the Wide Range Achievement Test

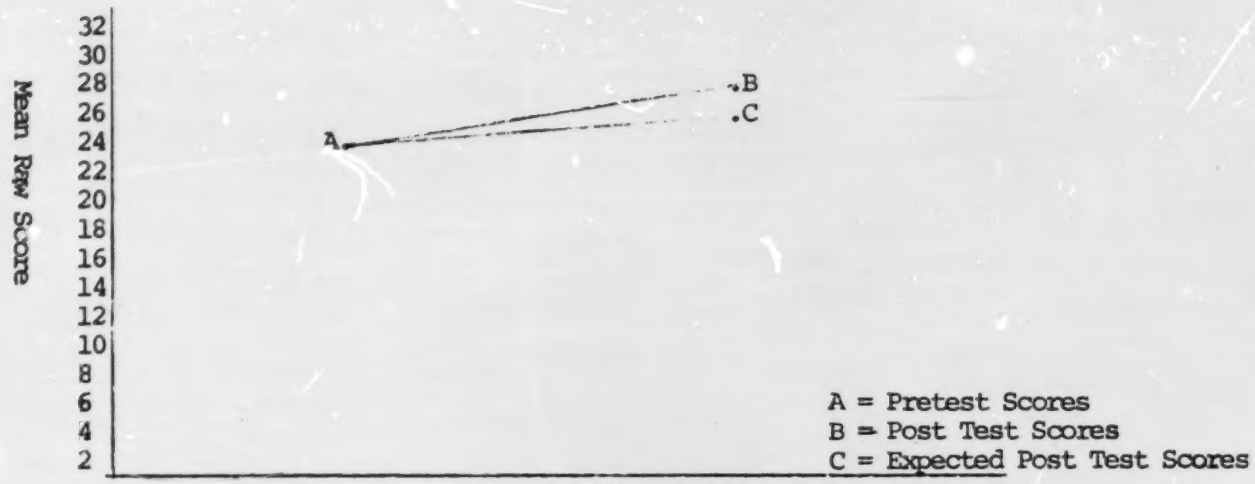
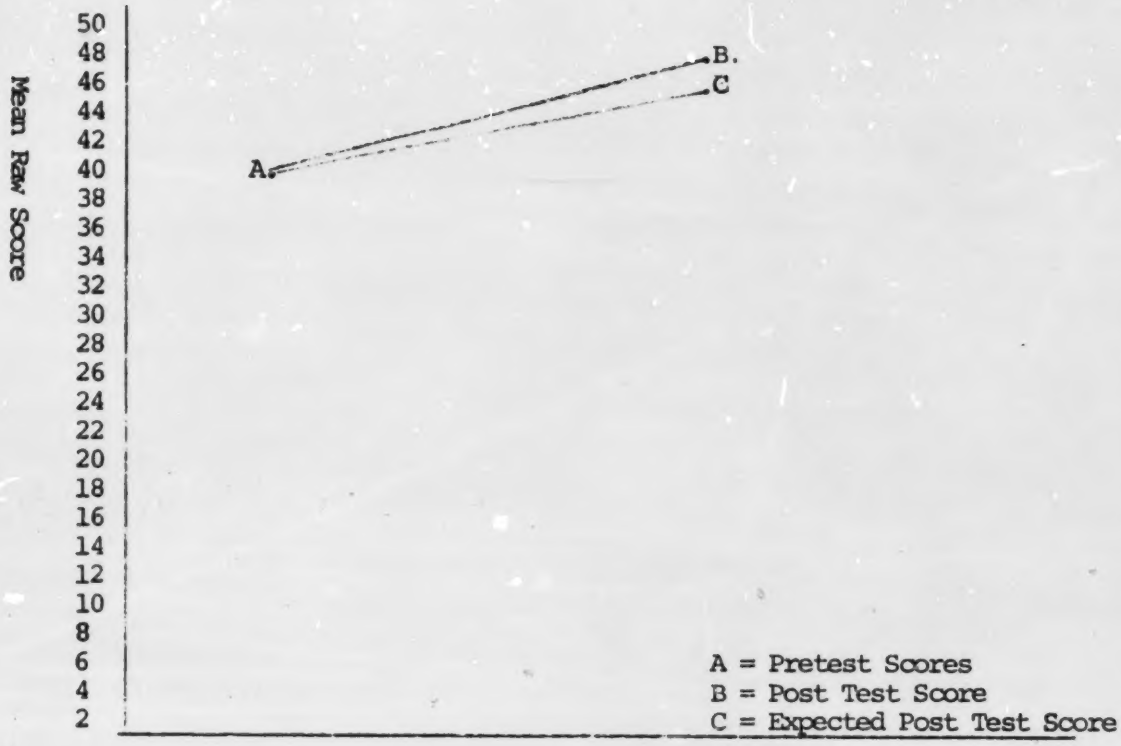


Table 2

Mean Raw Scores on the Reading Section of the Wide Range Achievement Test



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